LuCiD
The ESRC International Centre for Language and Communicative Development

What's the difference between 2-year-olds and 3-year-olds?

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The ‘Manchester corpus’ project

- 12 children followed from approx. age 2 – age 3
- Recorded in home environment for 1hr/week
- Recordings transcribed for child and caregiver language
- Analyses of patterns of acquisition

Theakston et al., 2001

Developmental changes in language

Language at 2 years

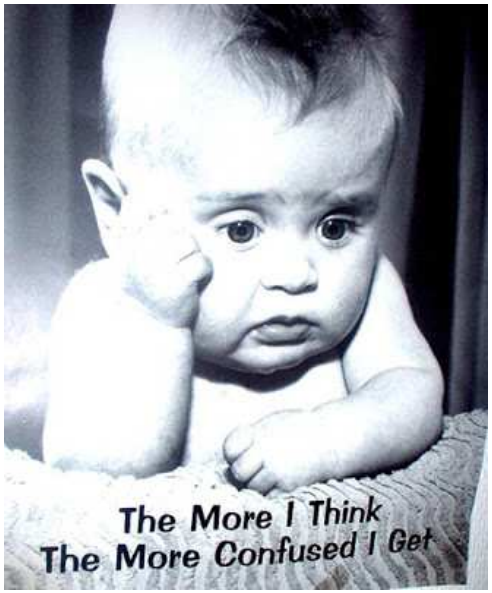
Language at 3 years

Key developments from 2 to 3 years

- Clearer pronunciation
- Larger more varied vocabulary
- Use of 'function' words, not just content
- Longer sentences
- More complex grammatical constructions
- Asking variety of questions
- Greater flexibility

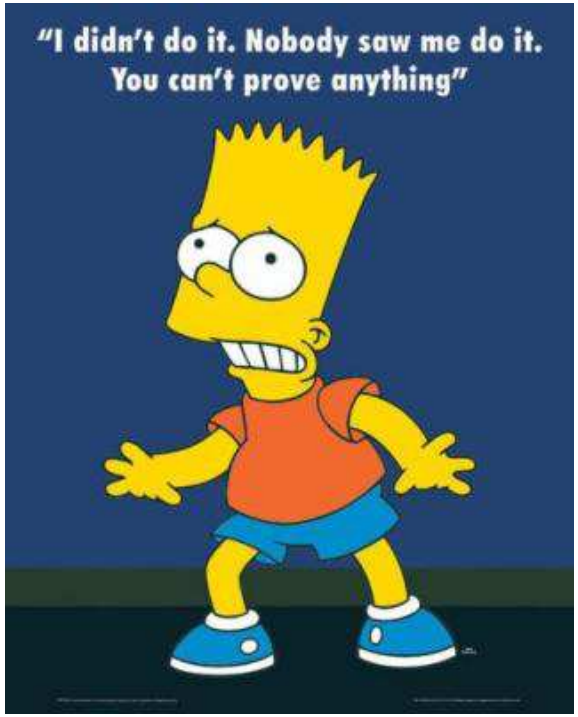
Overview

1. Putting sentences together
   - How do utterances become more complex?



2. Grammatical errors
   - What kinds of errors occur, when, and why?

3. I know what you know!
   – Choosing what to say based on shared information



4. Comprehension vs. production
   – Do children know more than they can tell you?

1. Putting sentences together

- Most two-year-olds are beginning to combine words into short sentences, but still use lots of single word utterances
  - ***There duck; Get down*** *(*Aran age 2)
  - ***My book; Liz draw*** (Liz age 2)

- By three years of age, sentences are longer & more complex
  - ***… because I put the thing on him and it hurts him***
  - ***I'm trying to get the plughole out*** (Aran age 3)
  - ***It doesn't go yet, does it?***
  - ***I not going to build a tower.*** (Liz age 3)

Examples from the Manchester corpus, Theakston et al., 2001

Learning from the ends of utterances

- In Psychology, there are well known 'primacy' and 'recency' effects on memory
  - We remember what we experienced **first** and **most recently**, but tend to forget a lot from the middle (except the cuddly toy!)…

- **Is learning language the same?**
- Computer models show us that children may initially learn from the **ends of sentences** (Freudenthal et al., 2007)

What happens if children only register the beginnings/ends of utterances?

- Daddy [will really] like that
- I [want to] go now

- [Please let] me do it
- [Where's] rabbit hiding?
- [Perhaps it's] Mummy singing
- [He] can't find it

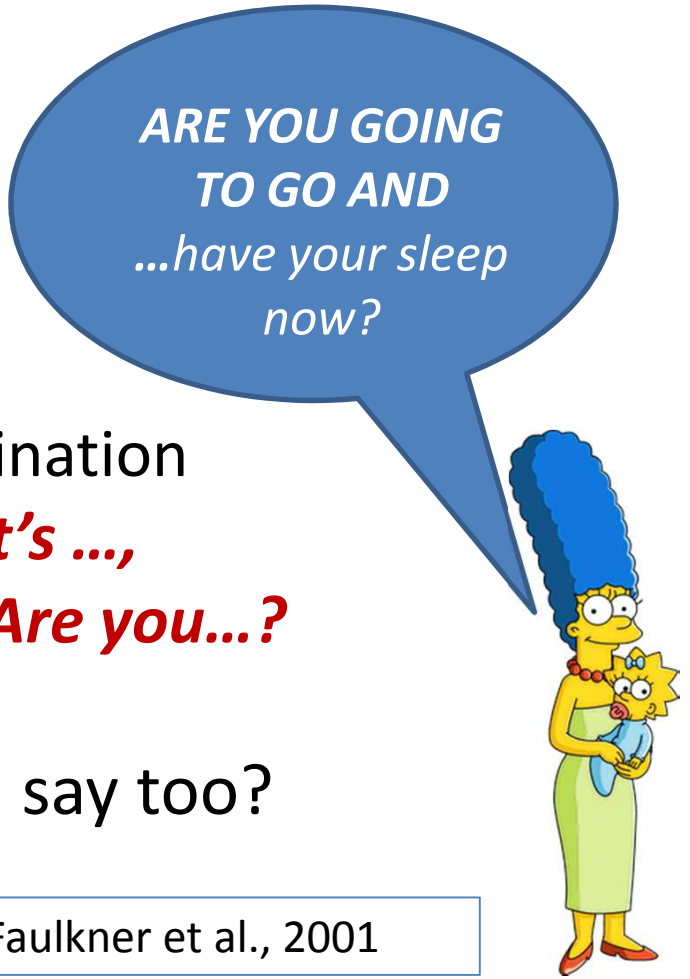
How do children build complexity?

- **Repetition:** around **half** of the utterances mothers address to their 2-3yr old children

  – begin with one of **17** words
  e.g. ***What, that, it, you, I, is, shall…***

  – begin with a high frequency combination of words e.g. ***It's a…, Can you …, Let's …, Here's a …, Look at…, What did…?, Are you…?***

- Is there repetition in what children say too?



Cameron-Faulkner et al., 2001

and my breakdown truck		I don't want that	I want go get down	it's mine
at Nicola's		I go be lost	I want my phone	it's mine's
bring these		I go get lost	I want one Nicola's puppys	it's no
bye man	(my) kiss	I go in hut	I want sit on my horse	it's not
can't go in there	go away	I got cold		it's not friend of mine
can't play with		I just wipe my pen hand		too late
can't sit the		not		got some writing on
chop things up		I not call it Dan_dog		last week
come in my house	hello Sarah	I play these games	a naughty boy's done that	Maxine out
come in my hut	I got my slippers on	I play with Mummy	it does works	Maxine shop
come in my own house	I got one	I play with my tractor	it don't work	Maxine's out
come my house	I got some more	I play with them in the house		me hiding my tractor
don't like me	I put Dan_dog away	I put it away		Mummy come my house
don't want it	**I can't**	I put my notes		**my** breakdown truck and **my** tractor
don't want write ideas	**I can't** go back	I stand up		**my** dump truck
don't want write my ideas	**I can't** ring Maxine	I think so	it's a big one in my house	**my** house
down there	I don't know	I throw it away	it's a man	**my** house down there .
eating Nicola up	I don't want play with Mummy	I want get on the back	it's lock	**my** spanner's in here .

(I) Can't Verb/Action ...

Come in my...

I Verb/Action ...

My Noun/Object ...

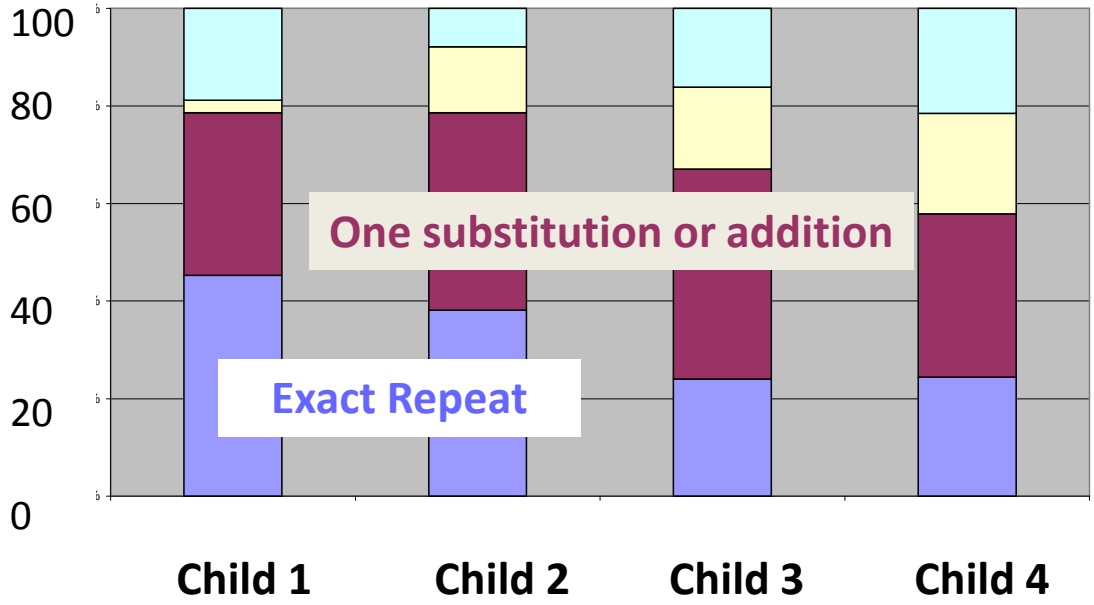
How do children's utterances build on what they have previously said?

(Lieven et al, 2009)

- Study of four children for 6 weeks at 2 years old (one child followed until 3yrs).
- Recorded for 5 hours/week.
- All utterances on last recording of 6 weeks noted.
- All previous recordings searched for 'closest' match.

Utterance on last recording	Previous utterance	Change required
I got the butter	**I got the door**	substitution
I closed the door	**I got the door**	substitution
It's burning here	**It's burning**	addition

Proportion of total utterances



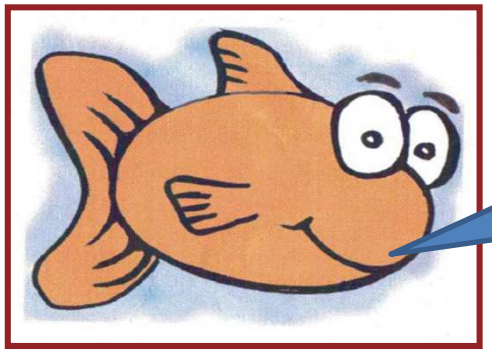
At 2 years of age:

- 60-80% of children's utterances at 2;0 are **exact repeats** of what they have said before, or differ from something said before by only **one substitution/addition**

By 3 years of age, and with increasing language ability:

- **Fewer** exact repetitions, & more **varied types of substitutions** (e.g. fewer object names, more actions, descriptives)

2. Common language errors emerging between 2-3 years



Yesterday he… weared his wellies

What Daddy's doing?

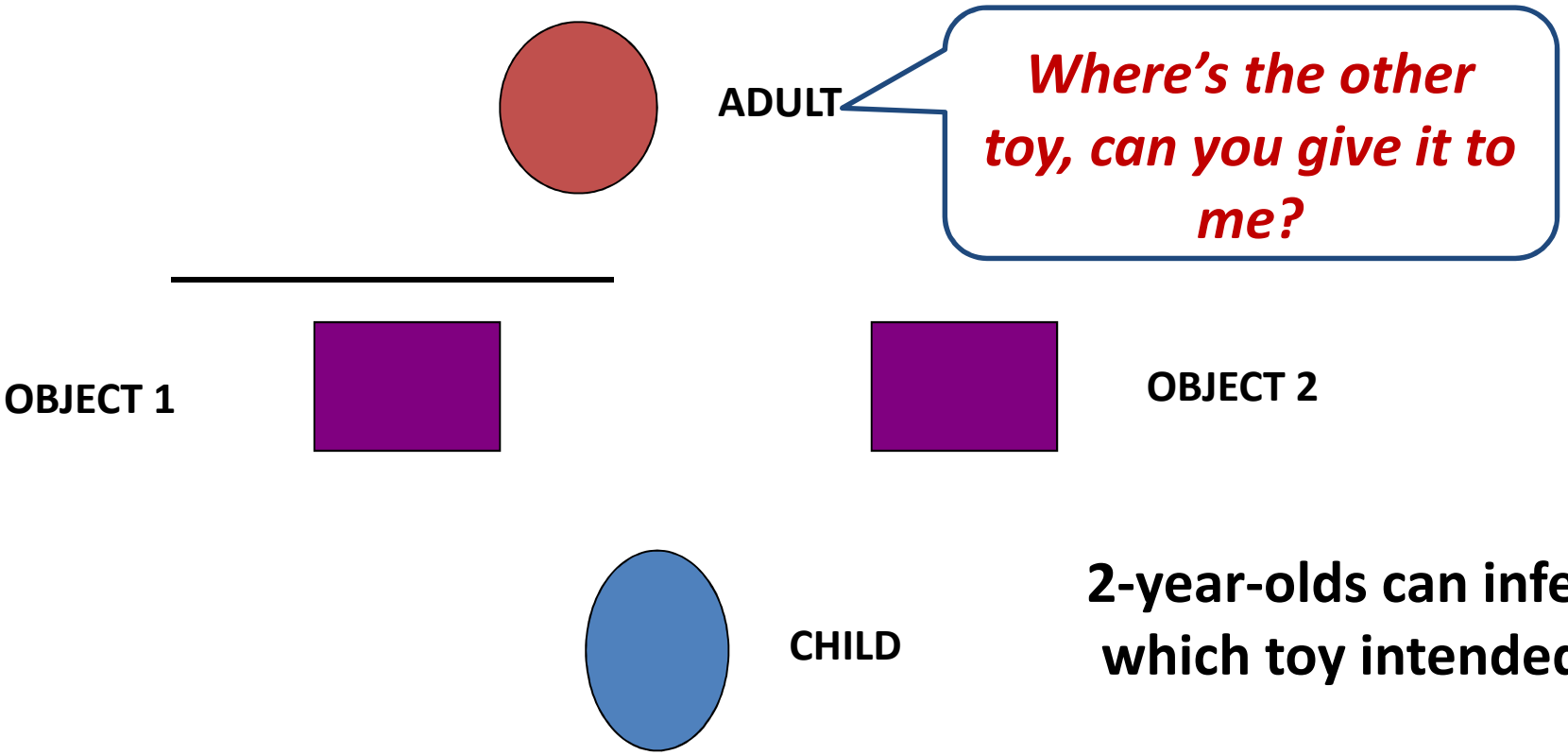
Me have a nut because my bigger!

Why do errors happen?

- Children are
  - learning **incomplete chunks** from sentences (e.g. *What + Daddy's doing…*
  - **extracting regularities** (e.g. past tense forms end in /d/ or /t/ sound -> *wear+ed*)
  - being **creative with their limited resources** to convey their intended message (e.g. ***No*** *fit in da box,* Brian age 2½)
  - Using **high frequency forms in the wrong context** (e.g. *They* ***is*** *hurting him* ***they are'*** Aran age 3)

3. I know what you know

- Perceptual availability: <u>what</u> someone else can see



2-year-olds can infer which toy intended

(Moll & Tomasello, 2006)

Are children sensitive to what has been **seen** before in their choice of language?

(Matthews et al., 2006)

- Tested 2 & 3 year olds

- Watched videos of characters carrying out actions, e.g. *a witch eating, a fairy dancing.*

- Two conditions:
  - Adult **can see** (sits with child to watch video)
  - Adult **can't see** (sits behind screen while child watches video)

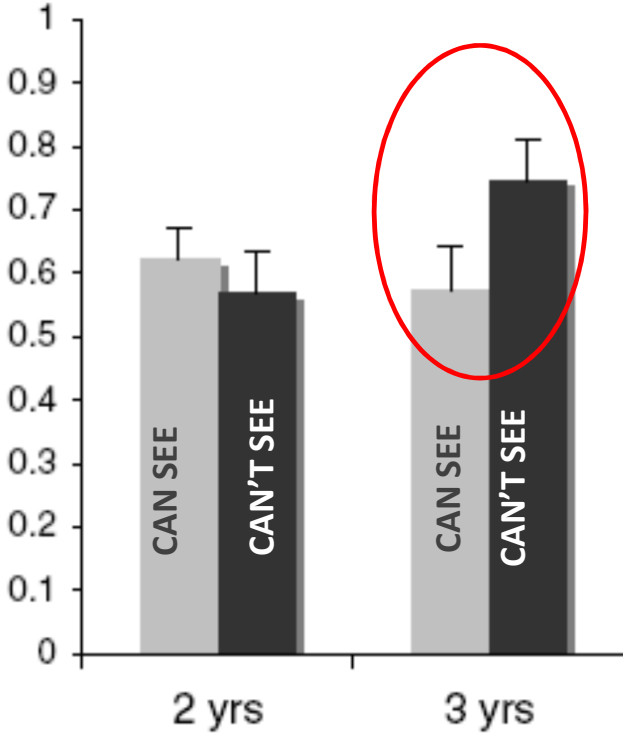
- Child asked to describe what they saw
  - *What happened/What did you see?*

- How informative is the child in revealing which character was involved?
  - ***The fairy** was dancing*
  - ***The fairy***

  - ***She** was dancing*
  - *Dancing*

- Latter only appropriate if adult **saw** the video

How often do children name the character?



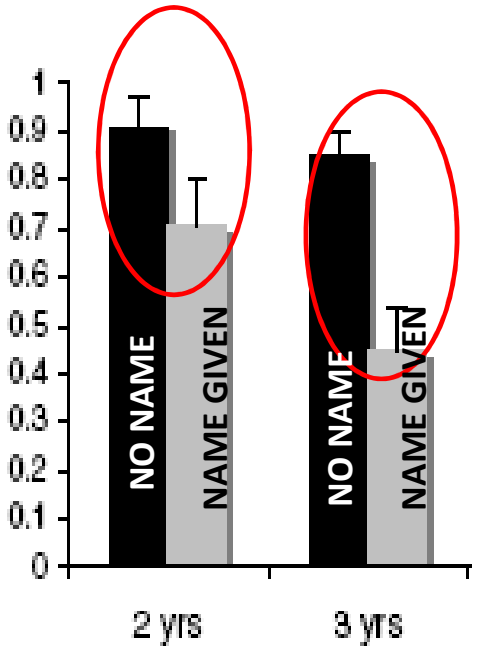
% 'THE FAIRY' responses

- **2-year-olds** don't differentiate between adult who has shared knowledge of the video and one who does not.
- **3-year-olds** perform better, using more '*The fairy*' responses when the adult did **not** see the video

Are children sensitive to what has been **said** before?

- Child watches video with Adult 1.
- Adult 2 on other side of room.
- Adult 1 "whispers" name of character involved in action
- Two conditions:
  - **Adult 2 overhears *"Was that the clown? What happened?"***
  - **Adult 2 doesn't overhear "*That sounds like fun, what happened?"***

How often do children name the character?



% 'THE CLOWN' responses

- **2-year-olds** and **3-year-olds** use more naming responses (*The clown*) when the adult asking the question has **NOT** used the name before.

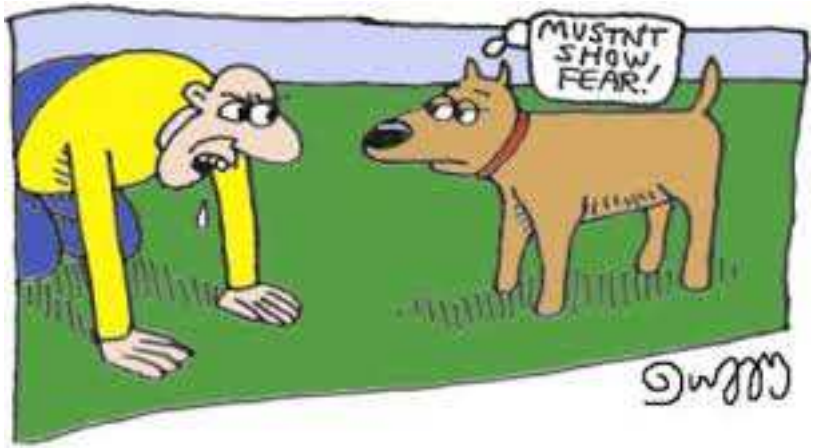
4. Understanding Word Order

- Understanding Word order is critical to understanding who did what to whom in English

Dog bites man

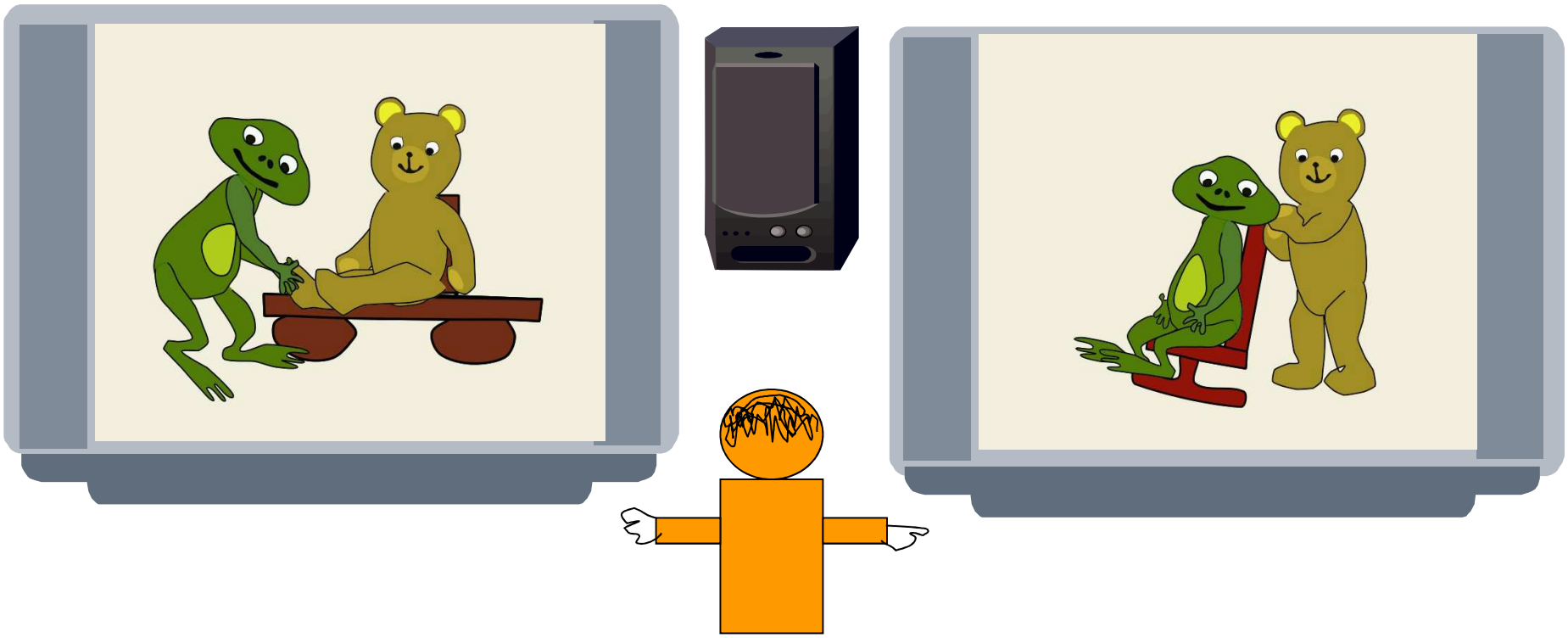
versus

Man bites dog!



What do children know?

"The teddy is glorping the frog"



Experimenter records "looking time" or 'point' to each screen

From around **21 months**, children perform well on this task

Gertner et al., 2006

What about language production?

- ***Look, this is called meeking. What's happening here?***

- **2-year-olds** typically at chance in whether they get the order of participants correct
  Teddy's meeking Frog vs.
  Frog's meeking Teddy
- **By 3yrs**, children can correctly order participants in sentence (Akhtar & Tomasello, 1997)

At **2 years**, children can use sentence structure to interpret events, but they can't necessarily find the right combinations of words to describe them

Summary

- **Two year olds**:
  - Begin with shorter parts of sentences
  - Build complexity by repeating and slightly changing what they've said before
  - Make relatively few errors increasing towards 3yrs
  - Only understand the basics of mapping what others know to how to talk about things informatively
  - Understand more than they can say themselves

Summary cont.

- **Three year olds**:
  - Have larger prefabricated chunks of language
  - Can use these chunks to process more of the longer sentences they hear
  - Make a variety of errors giving us insights into how they are learning language
  - Are getting better at mapping choice of language onto their understanding of what other people know
  - Also know more than they can tell you in language – but they may start to use more co-speech gestures

LEARNING & DEVELOPMENT COMMUNICATION & LANGUAGE

Up to speed?

A 'language-rich' environment both at home and in the nursery is vital if a child is to progress easily through the many stages of early speech development. In the first of a series on communication and language, *Professor Caroline Rowland* and *Dr Michelle Peter* explain why

Children differ enormously in how quickly they learn to talk. Some children are faster than others, producing their first words before one year of age. In fact, some children speak before they can crawl. Some are adventurous at combining words, producing full sentences early in life, though these are often peppered with grammatical errors. Others seem more cautious, only combining words when they are absolutely sure they have the grammar right.

The fastest children not only start learning words earlier, they also learn more words per day than the slowest children'. At 18 months of age, the fastest American children know more than 320 words on the MacArthur-Bates language checklist, yet the slowest only know four. The difference between fast and slow language learners is, therefore, not trivial. (Explore the data on the CLEX database at www.clex.ucl.ac.uk.)

Most of the time, these differences are not worrying. Many children eventually catch up. In fact, a large number of children identified as 'late talkers' at age three end up with language ability within the normal range by age six (although a few weaknesses remain)[1]. In addition, many of the differences between fast and slow learners are beyond our control; second-born children, for example, often develop language more slowly than first-borns simply because they have to share their parents' attention with their older sibling.[2]

Sometimes, however, slow language learning is more of a problem. Clearly, children with a physical barrier to language learning such as a hearing impairment or a cognitive disability such as Down syndrome, will need specialist help from speech and language therapy teams. However, it is also the case that some children are delayed simply because they do not receive enough language stimulation in their everyday lives[3]. For these children, simply providing a language-enriched environment in nurseries and pre-schools, and encouraging parents to do the same in the home, can be of huge benefit.

ACHIEVING THE MAJOR MILESTONES

The process of acquiring a language involves a number of complex tasks, each of which has to be mastered in turn during the early years (see box). At each stage of the process, children need a stimulating, language-rich environment. However, what we mean by a language-rich environment can differ depending on what part of language children are trying to master.

Talking about what a child is already focused on helps them to learn words

Sounds

For example, before they can start to produce words, children have to learn to distinguish, and produce, speech sounds like 'ba', 'pa', 'da'. This is a key milestone – if children can't distinguish between a pa and a ba, they will never be able to distinguish between words like pat and bat (a very important skill if someone has just told you to put the dog).

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Thank you for listening.

Any questions?

Find out more via our series of articles in Nursery World magazine, available at:

http://www.lucid.ac.uk/resources/for-practitioners/

LEARNING & DEVELOPMENT COMMUNICATION & LANGUAGE

My mistake

When learning a language, children often say things that don't sound quite right. In the last article in this series, *Professor Julian Pine* explains why 'clever mistakes' are often a sign of progress

When he was young, my son used to love playing cops and robbers. One day, we ran out of the house, kept into the car like Starsky and Hutch, and as we wheel-spun out of the drive, he came out with the immortal words: 'Stay your eyes on that car in front'. The episode has entered into family folklore; he has never lived it down.

'Stay your eyes on that car in front' is an example of a clever mistake. It is quite a creative thing to say – certainly not something that a seven-year-old is ever likely to have heard – but it is also not quite right. So why did he say it? What does it tell us about his knowledge of language at the time? And why does he not say things like this now that he is an adult?

The answers to these questions can tell us a lot about what children know about language at different points in development, and about how best to respond to them when they say things that sound a bit odd.

WHY DO CHILDREN MAKE CLEVER MISTAKES?

'Stay your eyes on that car in front' is not the kind of thing that a very young child would say. But clever mistakes have many forms'. Some involve putting a word like 'stay' in a sentence in which it does not belong. These mistakes can often look quite complicated, and it is not always easy to understand what is causing them.

Others, like 'sheeps', and 'eated', involve using a word with the wrong ending, and it is much easier to see where the child is going wrong. For example, a child who is saying 'eated' instead of 'ate' has added '-ed' to 'eat' because they heard it used this way in words like 'kicked' and 'jumped'.

These simpler kinds of mistakes can appear very early in children's speech. For example, when parents are asked about the kind of mistakes their children make, some of them report mistakes like 'eated' and 'drinked' when their children are as young as two years old'.

Mistakes like 'foots' and 'sheeps' can appear even earlier than this. For example, in one study, a child called Ari was found to use the words 'sheeps' and 'sheen' to describe collections of sheep and deer when he was only 20 months old. This was before he was even putting two words together to make simple sentences'.

Mistakes like 'Stay your eyes on that car in front' do not start appearing until children's speech becomes a little more complicated, and persist well into the primary school years.

We owe a lot of our knowledge about these mistake to Melissa Bowerman, a linguist who kept detailed records of all the unusual things that her daughters Eva and Christy said between the ages of two and 11. She noted down these examples on bits of paper, together with the age at which the child made them, and filed them away so that she could come back to them later to work out where they were coming from'.

Although Eva and Christy made different mistakes in response to the different situations they found themselves, the kinds of mistake they made were remarkably similar. For example, both children made mistakes in which they attached 'un-' to the beginning of words to reverse their meaning.

So, on one occasion, Eva's response to being caught in a chasing game was to shout: 'Uncapture me!' On another, while telling a ghost ➤

Adults can use children's mistakes to identify which parts of language the child is working on

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